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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,844	10/29/2003	Raphael Duval	PET-1802 D2	2492
23599	7590	08/08/2007	EXAMINER	
MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			HENRY, MICHAEL C	
ART UNIT		PAPER NUMBER		
1623				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/694,844	DUVAL, RAPHAEL
	Examiner Michael C. Henry	Art Unit 1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 May 2007.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1,6-12 and 14 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 2-5,13 and 16-19 is/are rejected.
- 7) Claim(s) 15 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## **DETAILED ACTION**

The following office action is a responsive to the Amendment filed, 05/24/07.

The amendment filed 05/24/07 affects the application, 10/694844 as follows:

Claims 2-5 and 13 have been amended. It should be noted that the status of claim 15 (i.e., currently amended) is incorrect since this claim was not previously presented. New Claims 16-19 have been added. Claims 1, 6-12 and 14 are withdrawn.

The responsive to applicants' arguments is contained herein below.

Claims 1-19 are pending in the application

### ***Claim Objections***

Claim 15 is objected to because of the following informalities: The status of claim 15 (i.e., currently amended) is incorrect since this claim was not previously presented. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-5, 13, 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "W<sub>4</sub>" in claim 2 and 13 render the claims indefinite. More specifically, it is unclear what chemical moiety or group does the term W<sub>4</sub> represent. That is, the term W<sub>4</sub> is not defined in the claims. Similarly, the term "W<sub>1</sub>" in claim 2 and 13 render the claims indefinite.

More specifically, the term “W<sub>1</sub>” represents a linear or branched alkylene group ....., and later in the same claim “W<sub>1</sub>” is represented as an oxygen ..... Consequently, it is unclear whether “W<sub>1</sub>” is intended to represent both defined groups or not.

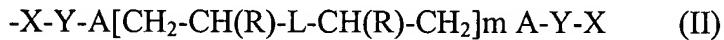
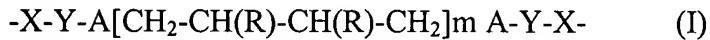
***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson (US 3,627,872) in combination with Francotte (WO 97/49733).

In claim 2, applicant claims a support material consisting essentially of a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II):



where X represents an oxygen atom or the group -NH, m is an integer other than zero equal at most to 5, R represents a hydrogen atom or a substituted or non-substituted, linear or branched alkyl radical having from 1 to 8 carbon atoms, Y represents a single bond, -NH-CO-group, -NH-CS group or -CO-group, A represents a single bond, a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms or an aralkylene radical having from 7 to 40 carbon atoms, ..... Claims 3-5 are drawn to said support material wherein the support material is of specific form or shape, specific % or

wherein the support material obtained from specific source. Claim 13 is drawn to a percolation membrane comprising a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II).

Parkinson teaches a cross-linked polymer compound comprising a radical of general formula (I), that is an ether bridge or linkage of the general type -O-X-O- wherein X represent an aliphatic radical containing 3 to 10 carbon atoms inclusively (see col. 2, lines 5 to 44). Thus, when X is an aliphatic radical (such as alkylene group) that contains 4 carbons then Parkinson's radical is the same as applicant's radical of general formula (I) wherein X represents an oxygen atom, m is an integer = 1, R represents a hydrogen atom, Y represents a single bond and A represents a single bond (see col. 2, lines 5 to 44). Furthermore, Parkinson discloses that the cross-linked polymer compound can be formed from polysaccharide such as dextran, starch, cellulose and hydroxyethyl cellulose (see col. 2, lines 5 to 44).

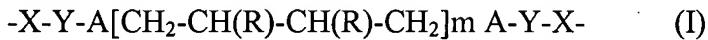
Parkinson fails to recite a specific compound, but suggests a compound that reads on the claimed invention.

Francotte discloses that crosslinked polysaccharides (polymers) derivatives can be used as support materials for chromatographic separation of enantiomers (see abstract) and that in conditioned form, they can be used as pure polymers the for chromatographic separation of enantiomers (see abstract).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made, in view of Parkinson and Francotte, to have prepared any compound suggested by Parkinson, in order to use them as support materials for chromatographic separation of enantiomers.

One having ordinary skill in the art would have been motivated, in view of Parkinson and Francotte, to prepare any compound suggested by Parkinson, in order to use them as support materials for chromatographic separation of enantiomers. It should be noted that the use of support material in specific form or shape, specific % or specific source (as recited in claims 3-5) depends on the factors such as the type of chromatography separation technique used.

In claim 13, applicant claims a percolation membrane comprising a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II):



where X represents an oxygen atom or the group -NH, m is an integer other than zero equal at most to 5, R represents a hydrogen atom or a substituted or non-substituted, linear or branched alkyl radical having from 1 to 8 carbon atoms, Y represents a single bond, -NH-CO-group, -NH-CS group or -CO-group, A represents a single bond, a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms or an aralkylene radical having from 7 to 40 carbon atoms, .....

Parkinson teaches a cross-linked polymer compound comprising a radical of general formula (I), that is an ether bridge or linkage of the general type -O-X-O- wherein X represent an aliphatic radical containing 3 to 10 carbon atoms inclusively (see col. 2, lines 5 to 44). Thus, when X is an aliphatic radical (such as alkylene group) that contains 4 carbons then Parkinson's radical is the same as applicant's radical of general formula (I) wherein X represents an oxygen atom, m is an integer = 1, R represents a hydrogen atom, Y represents a single bond and A represents a single bond (see col. 2, lines 5 to 44). Furthermore, Parkinson discloses that the

cross-linked polymer compound can be formed from polysaccharide such as dextran, starch, cellulose and hydroxyethyl cellulose (see col. 2, lines 5 to 44).

Parkinson fails to recite a specific compound, but suggests a compound that reads on the claimed invention.

Francotte discloses that crosslinked polysaccharides (polymers) derivatives can be used as support materials for chromatographic separation of enantiomers (see abstract) and that in conditioned form, they can be used as pure polymers the for chromatographic separation of enantiomers (see abstract).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made, in view of Parkinson and Francotte, to have prepared any compound suggested by Parkinson, in order to use them as support materials for chromatographic separation of enantiomers.

One having ordinary skill in the art would have been motivated, in view of Parkinson and Francotte, to prepare any compound suggested by Parkinson, in order to use them as support materials for chromatographic separation of enantiomers. It should be noted that the use of support material in specific form or shape, specific % or specific source (as recited in claims 3-5) depends on the factors such as the type of chromatography separation technique used. Furthermore, it should be noted that the use of cross-linked polymer compounds in the form of membranes (as recited in claim 13) also depends on factors such as the type of chromatography separation technique used.

*Response to Amendment*

Applicant's arguments with respect to claims 2-5, 13, 16-19 have been considered but are not found convincing.

The applicant argues that the polysaccharides in Parkinson contain an ether bridge of the type "-O-X-O-" wherein X represents an hydroxyl group-containing aliphatic radical, of the type  $\text{CH}_2\text{CH}(\text{OH})\text{CH}_2$ . To the contrary, in the claimed invention, the "R" radical can only be a hydrogen atom or an alkyl radical having from 1 to 8 carbon atoms; "R" can never be a hydroxyl group. Hence, even if Parkinson generally disclosed polysaccharides comprising ether bridges, such ether bridges are different from those of the claimed invention. However, Parkinson teaches a cross-linked polymer compound comprising a radical of general formula (I), that is an ether bridge or linkage of the general type -O-X-O- wherein X represents an aliphatic radical containing 3 to 10 carbon atoms inclusively (see col. 2, lines 5 to 44). Thus, when X is an aliphatic radical (such as alkylene group (see also claim 1)) that contains 4 carbons then Parkinson's radical is the same as applicant's radical of general formula (I) wherein X represents an oxygen atom, m is an integer = 1, R represents a hydrogen atom, Y represents a single bond and A represents a single bond (see col. 2, lines 5 to 44). Moreover, it should be noted that an alkylene group does not require the presence of a hydroxyl group. Furthermore, Parkinson discloses that the cross-linked polymer compound can be formed from polysaccharide such as dextran, starch, cellulose and hydroxyethyl cellulose (see col. 2, lines 5 to 44).

The applicant argues that Parkinson neither discloses nor suggests the compounds of the claimed invention nor their use as support material useful for the separation or preparation of enantiomers. The rejection is made over Parkinson in combination with Francotte. Thus, it

would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made, in view of Parkinson and Francotte, to have prepared any compound suggested by Parkinson, in order to use them as support materials for chromatographic separation of enantiomers.

***Conclusion***

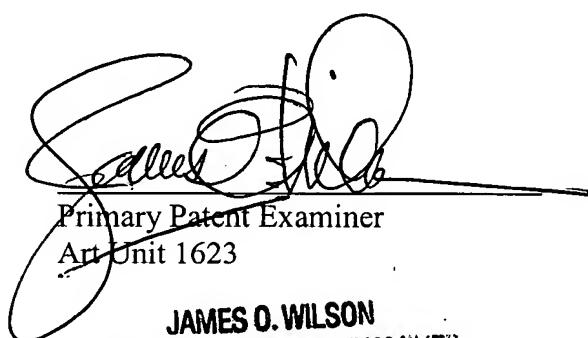
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8.30am-5pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael C. Henry

August 6, 2007.

  
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